

Serial Number: 09/805,234

An Information Disclosure Statement is submitted herewith to provide additional documents for the Examiner's consideration during reconsideration of this application. The relevancy of these documents was not previously apparent to Applicant's attorneys.

The claims have been amended to take into account all objections raised by the Examiner as well as the Examiner's rejections under 35 U.S.C. § 102 and 103.

Claim 1 now specifically recites that the core layer of the laminated floor covering panel is made of MDF/HDF; the coupling elements are formed in one piece with the core layer and define tongue and groove interlocking elements; a cut-away bevel is provided adjacent the opposite edges defining the tongue and groove elements, the bevel being defined as intersecting the top side of the panel, while penetrating and exposing an edge area of both the decorative layer and the core layer when viewed from the top side of the panel. Finally, a decorative bevel covering layer is provided on the area of the cut-away bevel that masks the exposed edge areas of the panel decorative layer and the core layer, the bevel covering layer being defined as a separate layer apart from the panel decorative layer.

It is respectfully submitted that claim 1 as amended is fully patentably distinctive over all prior art of record in this application, considered individually or in any reasonable combination of teachings that may be extracted from the documents.

With respect to the Examiner's inquiry as to the meaning of "MDF and HDF", these terms have well-defined meanings in the art and, as explained in the specification as-amended, they refer to medium density fiberboard and high density fiberboard. This material is understood by those familiar with wood-based manufactured panels to constitute a distinct type of board made by highly compressing loose wood fibers (as distinguished from chips, saw dust, and particles) with a resin binding material that results in an extremely dense and hard board having relatively high compressive strength and other structural properties as suitable for flooring and other applications. Various sources may be referenced, including patents, literature and the World Wide Internet to obtain additional information concerning the specific properties of MDF and HDF.

If the Examiner desires additional information concerning MDF and HDF materials, she is invited to contact Applicant's attorney and additional information will

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be provided concerning such materials.

In accordance with the present invention, it is desirable for some applications to provide a cut-away bevel extending along the joint area between adjacent floor covering panels having a laminated construction with a MDF/HDF core layer. The problem arises in that the MDF/HDF core is not attractive, is relatively porous and will not match the decorative surface layer of the panel, which typically resembles wood flooring. When the bevel is formed, the edge of the panel decorative layer is exposed as well as a portion of the MDF/HDF core material. The present invention lies in the discovery that the bevel decorative covering can be applied over the bevel area to cover the exposed core and panel decorative layer such that, for example, the bevel area matches the appearance of the top surface layer or otherwise blends with the overall appearance of the flooring material. None of the prior art is seen to disclose or suggest the combination of the structural elements now recited in claim 1.

The remaining claims have been amended in a manner consistent with claim 1 and to recite the additional inventive subject matter in clear, definite terms.

The Examiner's statement of detailed reasons underlying the rejections under 35 U.S.C. § 102 and 103 is appreciated and reflects a careful evaluation of the patentability of the original claims. However, it is submitted that with the present amendments, the claims define the inventive subject matter in a manner that traverses and renders moot the original rejections established by the Examiner.

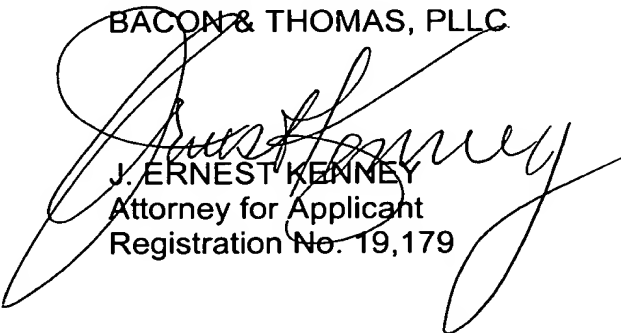
It is respectfully submitted that this application is now in condition for issuance and the same is respectfully requested. In the event that any issues remain that may be resolved by a telephone conference with Applicant's attorney, the Examiner is invited to contact the same by telephone at the number shown below.

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MARKED-UP VERSION OF AMENDED ABSTRACT

ABSTRACT

[A floor] Floor covering [of] hard panels [(2)] having at least on two opposite edges [(3-4; 5-6)], coupling elements [(7)] made in one piece with the panels [(2)], so that several ones of such panels [(2)] can be mutually coupled, whereby these coupling elements [(7)] provide for an interlocking in a direction [(R1)] perpendicular to the plane of the [floor covering (1)] panels, as well as in a direction [(R2)] perpendicular to the edges [(3-4; 5-6)] and parallel to the plane of the panels [floor covering (1)], and whereby these coupling elements [(7)] are made such that the panels [(2)] can be rotated into and/or out of one another at least along the above-mentioned edges [(3-4; 5-6)]. The panels [(2)] are provided, at least on the above-mentioned edges [(3-4; 5-6)], near the top side, with a part from which has been removed an amount of material such as by a bevel [level].

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FLOOR COVERING

Background of the Invention

Substitute Specification

MARKED-UP

VERSION

S.N. 09/805,234

1. Field of the Invention

The present invention concerns *panels* ^{*laminated*} a floor covering, in particular ^{*of*} the type consisting of ^{*hard*} panels.

2. Related Art

^{*In*} a particular, yet not restrictive manner, it concerns a floor covering formed of laminate panels, also called laminate parquet.

It is known that such laminate panels can be made of different layers. Usually, the panels are formed of boards ^{*based on*} on the basis of ^{*products*} wood, such as chipboard or fibreboard, in particular MDF or HDF, upon which ^{*(medium density fiber board and high density fiberboard)*} one or several layers, including a ^{*panel*} decorative layer, are provided at least on the top side. The ^{*panel*} decorative layer may be a printed paper layer, but in certain embodiments it may just as well be a layer of wood, in particular veneer. Such panels can also be made of other materials, for example merely synthetic material, or of a base plate ^{*having a wood base*} on the basis wood, such as chipboard, MDF or HDF and the like, upon which is provided, instead of a printed paper layer or veneer, another material such as cork, thin strips of wood and the like.

It is also known to couple these panels on their edges as they are laid, either by means of a conventional tongue and groove joint, whereby they are possibly glued together, either by means of a glueless coupling which provides for a mutual interlocking of the panels both in the horizontal and vertical direction, for example as described in international patent ^{*publication*} No. WO 97/47934.

Summary of The ~~Present~~ Disclosure
hard, laminate
relates to panels for forming

The present invention ^{aims at} a floor covering ^{of} hard panels, in particular laminate panels, ^{and} which provides for new embodiments according to different aspects offering respective advantages.

According to a first aspect, the invention provides for a floor ^{panel} covering consisting of hard panels, whereby these panels are provided ^{at} least on two opposite edges, ^{having} with coupling means ^{or elements} made in one piece with the panels, so that several ^{of} such panels can be mutually coupled, ^{at such edges} whereby these coupling ^{means} ^{elements} provide for an interlocking in a direction perpendicular to the plane of the floor covering, as well as in a direction perpendicular to the edges concerned and parallel to the plane of the floor covering, and whereby these coupling ^{means} ^{elements} are made such that the panels can be rotated into and/or out of one another at least along the above-mentioned edges, ^{and/or even} characterized in that the panels are provided, at least on the above-mentioned edges, near the top side, with a part from which has been removed an amount of material ^(i.e., a bevel or chamfer)

^{With} [As] material ^{are obtained} [parts have been] removed from the top edge, [this] several advantages. A first advantage consists in that the panels, as they are rotated, both when rotating ^{into} one another and when rotating out of one another, can be moved more easily in relation to one another, as there are no angular ^{edges} [parts] anymore which hinder the mutual rotation of the panels. A second advantage consists in that the panels can be made heavier, in particular thicker than as usual, as the thickness of the panels, thanks to the bevel, has little or no influence anymore on the good working order of the above-mentioned coupling means, during the rotating in and/or the rotating out.

Preferably, the above-mentioned parts consist of bevels, in particular with a gradient of 45°. Practically, the bevels preferably extend,

in a horizontal direction, over a distance of at least 1 millimetre. Preferably, however, this distance is in the order of magnitude of 2 millimetre.

According to a different variant of the first aspect of the invention, the coupling ^{elements} [means] are made such that the panels, instead of being disconnectable at least by a rotation, can be disconnected from one another at least in one other manner. Even then, the above-mentioned bevel still offers certain advantages, as will become clear from the ^{following} further description.

According to the most preferred embodiment, the panels are rectangular and are provided with the above-mentioned parts, ^{that is} the above-mentioned bevels, respectively, on all four-sides.

According to a second aspect which can either or not be combined with the first aspect, the invention provides for a floor covering ^{comprising} consisting of ^{panels} [of] hard ^{panels} [panels] with a core upon which is provided a decorative layer, whereby these panels are rectangular and elongated and are provided with coupling means at least on the two opposite longitudinal edges, so that several ^{two} of such ^{panels} [panels] can be mutually coupled to one another, whereby these coupling ^{elements} [means] provide for an interlocking in a direction perpendicular to the plane of the floor covering, as well as in a direction perpendicular to the edges concerned and parallel to the plane of the floor covering, and whereby these coupling ^{elements} [means] are made such that ^{each panel} the panels can be coupled ^{to} and/or uncoupled by means of a rotation along ^{provided} their ^{edges} longitudinal ^{edges} [edge], characterized in that ^{and} the width of the panels is smaller than 17 cm, and preferably even smaller than 16 cm.

Further, ^{the panel} these panels, apart from the above-mentioned maximum width, preferably ^{have} have a length which amounts to at least eight times the width.

It is known that hard panels, which are equipped with coupling ^{elements} [means] which provide for a horizontal and a vertical interlocking on at least two of their edges, are made as relatively small plates with a width of 19 to 20 cm and a length of 1.20 to 1.40 m. It is also known that the plates, when being laid, have to be occasionally rotated into one another and out of one another so as to make them fit against a wall, skirting board or the like. A disadvantage of the known embodiments of the above-mentioned plates consists in that it is often difficult to carry out said rotation, for example when the plates have to be installed with their far ends under the edge of an overhanging cupboard or such. According to the above-mentioned second aspect of the invention, this disadvantage, as well as others, are ^{avoided} excluded, if not minimised. Thanks to the ^{small} [Small] width, the panels are less high when being rotated, so that there are no disadvantages during the installation in a large number of practical applications.

Moreover, the above-mentioned relation between length and width offers a technical solution, as a result of which the visual 'plate-like' effect is excluded.

According to a third aspect of the invention, ^{panels having} [it provides for a] floor covering consisting of hard panels, with ^{include} a laminated structure ^{and} [having] a decorative layer on the top surface, ^{as by cutting away} characterized in that ^{bevels or such} bevels or such are formed on one or several edges of the panels, near the top side, and ^{in that} [in that] the surface of these bevels ^{or such} [or such] is also provided with a decorative layer, preferably a layer provided as ^{separate material from the panel decorative layer} separate. In particular,

such a layer preferably consists of a separately provided print. Thanks to the use of such a separate print, the bevels can be easily provided with a ^{bevel} decorative surface. The base panels can then be ^{made} realized in a conventional manner by sawing them out of a large plate which has already been provided with a decorative layer, ^{panel} whereas the bevels ^{and} are ^{may be} printed ^{on the bevels} later.

According to a major embodiment of the third aspect, the above-mentioned print consists of a print which is obtained by means of transfer printing. Such transfer printing offers the advantage, in combination with its use on floor panels, that high production rates can be obtained and that any pattern whatsoever can be realized. Further, this technique excludes the risk of the decorative top surface of the panels being soiled. Another major advantage hereby consists in that the print is immediately or almost immediately dry, so that the panels can be stacked and packed almost immediately.

Preferably, the floor panels, which are made according to the third aspect of the invention, have a core made of a material ^{having a wood base} on the basis of wood, in particular wood which has been ground into particles or fibres, mixed with a binding agent, upon which the decorative layer is provided, and whereby the above-mentioned bevels extend through the material of the core. Thus ^{is obtained} a porous surface ^{is obtained} on the bevels, guaranteeing a good bond ^{of the print layer} of the print.

As usual, the decorative layer ^{of the panel} preferably contains a layer printed with a pattern, such as a wood pattern, and the decorative layer according to the invention, in particular the print on the bevels or such, is preferably ^{realized with} a similar pattern.

Moreover, use is preferably made of a moisture-proof, impermeable/^{panel}decorative layer or print respectively, which is particularly advantageous in case the panels have a base plate which consists of porous material, such as MDF, HDF/^(medium density fiberboard) or the like. Thus is obtained an entirely moisture-proof structure on the top surface, on the flat surface by means of the usual layer of synthetic material on the one hand, and on the bevels by means of the additional/^{bevel}decorative layer situated on the bevel on the other hand.

and high density fiberboard

Although the decorative layer on the bevels is preferably realized by means of transfer printing, other possibilities are not excluded. Thus, for example, use can be made of a self-adhesive strip.

According to a fourth aspect, the invention provides for a floor covering/^{Panel having a core made} consisting of hard panels with a core on the basis of MDF or HDF, or a similar material, ^{wherein the panel is} characterized in that the panels are each separately provided with an underlayer provided on the bottom side and fixed onto it, preferably made of polyethylene or ^{based material} on the basis of polyethylene. The combination of MDF or HDF with the use of an underlayer fixed onto it, especially when it is formed of polyethylene or is made on the basis of polyethylene, offers the advantage that particularly good sound-insulating qualities are obtained.

The present invention concerns embodiments applying only one of the above-mentioned aspects as well as embodiments in which two or several of the above-mentioned aspects are combined. In this respect it should be noted that two or several of the above-mentioned embodiments can be mutually combined at random, in any possible combination, provided these embodiments have no contradictory qualities.

Although, according to some of the above-mentioned aspects, the panels may consist of different sorts of material, the invention is particularly suitable for panels made of MDF or HDF, or a similar material.

According to a special embodiment, the panels have a thickness of 9 mm at the least, and better still of 10 mm. ^{at the least}, as opposed to the usual thickness of 7 or 8 mm.

Thus are obtained relatively heavy panels, which consequently have a better sound-insulating effect, as a result of which less sound is produced when they are walked on.

In so far as coupling means as mentioned above are used which allow for a glueless interlocking, they can be of different nature. Thus, these coupling means can ^{have} (show) one of the following characteristics or a combination of two or several of them:

- that they are provided on two opposite edges of the panels;
- that they are provided on panels which are rectangular, whereby they are provided on both pairs of opposite edges;
- that at least for a number of the edges they allow for an assembly according to one of the following possibilities:
 - at-least by shifting the panels towards one another;
 - exclusively by shifting the panels towards one another;
 - at least by rotating the panels along the edges concerned;
 - exclusively by rotating the panels along the edges concerned;
 - by shifting the panels towards one another or by rotating them, as desired;

- that, at least for a number of the edges, they allow for an uncoupling according to any of the following possibilities:
 - at least by shifting the panels but of one another in a direction perpendicular to the edges;
 - exclusively by shifting the panels out of one another in a direction perpendicular to the edges;
 - at least by rotating the panels along the edges concerned;
 - exclusively by rotating the panels along the edges concerned;
 - by shifting the panels out of one another as well as by rotating them;
- that they are of the type which consists of a tongue and a groove on the one hand, and of locking means which ensure at least a specific interlocking in a direction perpendicular to the edges of the coupled panels and parallel to the plane of the panels on the other hand;
- that they are realized as in the preceding paragraph, whereby the lip which limits the bottom side of the groove, seen from a cross section, extends past the upper lip, and whereby the locking means consist of one or several parts on the lip limiting the bottom side of the groove on the one hand, and of one or several parts on the bottom side of the tongue working in conjunction with the latter on the other hand;
- that the above-mentioned tongue and groove are made such that when two of such panels are freely shifted towards one another, ~~over a base or such~~, the tongue automatically ^{is introduced into} ends up in the groove;

- that they are formed such that the panels, when coupled, fit into one another without any play or almost without any play.

Naturally, the invention also concerns panels with which the above-described floor coverings can be realized.

Brief Description of the Drawings

In order to better explain the characteristics of the invention, the following preferred embodiments are described as an example only without being limitative in any way, with reference to the accompanying drawings, in which:

Figure 1 schematically represents a part of a floor covering which is built up of panels according to the invention;

Figure 2 represents a top view of a panel from the floor covering of figure 1;

Figures 3 and 4 represent sections, according to lines III-III and IV-IV respectively in figure 2;

Figure 5 represents a section according to line V-V in figure 1 to a larger scale; Figure 6 represents a section according to line VI-VI in figure 1 to a larger scale; Figure 7 represents the part indicated by F7 in figure 6 to a larger scale;

Figure 8 shows a view analogous to that in figure 7, but whereby the panels are mainly shifted towards one another in one and the same plane;

Figure 9 shows a section of another panel according to the invention, with bevels which are provided with a print;

Figure 10 schematically represents how the print can be provided in the embodiment of figure 9;

Figure 11 schematically represents a section according to line XI-XI in figure 10; *and*

Figure 12 represents a section of another panel according to the invention.

Detailed Description of Preferred Embodiments of the Invention

As represented in figures 1 and 2, the invention concerns a floor covering 1 as well as hard panels 2 from which such a floor covering 1 is built up.

According to a first aspect of the invention, a floor covering 1 *is formed* *laminated* *wherein* is concerned, consisting of, hard panels 2, whereby these panels 2 are provided at least on two opposite edges 3-4, and preferably, as represented in the figures 2 to 8, on both pairs of edges 3-4, 5-6 respectively, with coupling means or elements 7 made in one piece out of the *core* material of the panels 2, so that several of such panels 2 can be mutually coupled to one another, whereby these coupling means 7 provide for an interlocking in a direction R1 perpendicular to the plane of the floor covering 1, as well as in, a direction R2 perpendicular to the edges 3-4 or 5-6 concerned and parallel to the plane of the floor covering 1, *on panels 2* and whereby these coupling means 7 are made such that the panels 2 can be assembled and/or disassembled at least along the above-mentioned edges 3-4, 5-6 respectively, by means of a rotation.

Such coupling means 7, which make it possible to couple the panels 2 without any glue being required, at least on two sides and preferably on all sides, and whereby the panels 2 are uncoupled by rotating them out of one another, are known as such from international patent *Publication No. 97/47834* No. 97/47834.

From WO 97/47834 it is also known that the above-mentioned coupling means 7, as represented in figures 3 to 8 of the present application, may consist of a tongue 8 and a groove 9 on the one hand, and of locking device 10 on the other hand which at least ensure a specific interlocking in a direction perpendicular to the edges 3-4, 5-6 respectively, of the coupled panels 2 and parallel to the plane of these panels 2. As is further represented, these coupling means 7 are moreover preferably made such that the lip 11 which limits ^{or defines} the bottom side of the groove 9, seen from a cross section, extends past the upper lip 12, while the locking means 10 are formed of interlocking parts 13-14 working in conjunction, on the above-mentioned lip 11 which limits the bottom side of the groove 9 and on the bottom side of the coupled panel 2 respectively, in particular the bottom side of the tongue 8 or the extension of this bottom side.

As explained in WO 97/4834, such coupling means 7, depending on their embodiment, allow for different couplings. According to the most preferred embodiment, they are, as will be described hereafter by means of figure 1, made such that they allow for a coupling by rotating into one another as well as by shifting towards one another in a generally common plane. The latter allows such panels to be coupled by first rotating them into one another on their edges 3-4, as represented by the panel 2A in figure 1, with a rotation W1, and by subsequently snapping them together on their edges 5-6 by means of a translation T1. According to a variant, the connection on the edges 3-4 of the panels concerned can also be realized by starting from a position as is schematically indicated with reference 2B, and by coupling the panel concerned by means of a translation ^{or sliding motion} T2.

The above-mentioned rotation is further illustrated in figures 6 and 7, whereas the sliding motion is represented in figure 8. ^{It} ~~Hereby~~ should be noted that the tongue 8 and groove 9 are preferably made such that, as is also represented in figure 8, when two such panels 2 are freely shifted towards one another over a bottom or support, the tongue 8 automatically ^{is introduced into and} ends up in the groove 9.

It is also possible, while holding a panel 2A in a rotated position, to couple a following panel 2C onto it on the edges 5 and 6 ^{respectively} ~~concerned~~, either by means of a generally co-planar translation T3, or by a mutual rotation between the panels 2A and after which both panels 2A and 2C are then rotated down to be interlocked with the preceding row of panels.

Another advantage consists in that a glueless coupling without any play or practically without any play remains possible, also with thicker panels which can be rotated into and/or out of one another, without any extreme compression forces being created on the edge parts during the rotation. ^{according to this invention} The bevels ^{ensured} makes sure that such forces are excluded and/or remain limited, so that the risk of damages, among others to the top layer or to the surface of the bevels, are excluded, if not restricted.

What makes the first aspect of the invention special is that the above-mentioned panels 2 are provided, at least on two of their edges 3-4 or 5-6 and preferably on all four edges 3 to 6, near the top side, with a part from which an amount of material has been ^{cut away and} removed, which part preferably each time ^{is in the form} consists of a bevel 15.

As represented in figures 6 and 7, these bevels 15 among others offer the advantage that the panels 2 can be easily rotated in relation to one another, as the material parts 16 and 17 which are otherwise present

no longer press onto one another, and a contact zone 18 is obtained which is situated relatively low *in the panel thickness*

Another advantage *is that* [consists in that] when it is required for the above-mentioned interlocking parts 13 and 14, in particular the accompanying contact surfaces 19 and 20, to extend tangentially or almost tangentially around a circle having the contact zone 18 as its centre, the average gradient A of the contact surfaces can be kept relatively large for a same distance E of the protruding part of the lower lip 11, as indicated in figure 5, as a result of which a solid interlocking can be ensured, even with thicker panels 2.

Another advantage consists in that, irrespective of the thickness D of the panels 2, the contact zone 18 can always be situated at a certain height H above the bottom side of the panels 2, provided the bevels 15 are realized over an appropriate height H1. Thus it is possible, if required, to always work with similar cutting tools to form the tongue 8 and groove 9, for thinner as well as for thicker 5 panels 2.

Although the above-mentioned advantages are particularly felt with embodiments of the type whereby the uncoupling of the panels 2 can be realized by means of a rotation around the above-mentioned contact zone 18, it should be noted that the above-mentioned bevels 15 also offer advantages which do not necessarily coincide with the fact whether it is either or not possible for the panels 2 to be disassembled by means of rotation. Such bevels 15 offer the advantage that the panels 2 never press directly onto one another on their top surface, so that damage of the top layer resulting from mutual contact between the panels 2 is excluded, which is particularly important in the case of laminate parquet, as well as for floor coverings which are connected without any glue and

whereby the panels are driven one another laterally in a generally common plane by means of a hammer and a stop block.

Also, according to a different embodiment, the first aspect of the invention no longer merely applies to panels 2 which can be disassembled by means of a rotation, but it also applies to all sorts of panels 2 which are provided with coupling means 7 which make it possible for the panels 2 to ^{be}interlocked both vertically and horizontal on their edges 3-4, 5-6 respectively, irrespective of whether the assembly and/or disassembly has to be or can be realized by means of a rotation or sliding motion.

The above-mentioned bevels 15 preferably extend at an angle X of 45° in relation to the plane which is determined by or includes the panels 2. However, other gradients are not excluded.

Practically, the bevels 15 will extend in a horizontal direction over a distance Z in the order of magnitude of 2 millimeter, although other dimensions are not excluded here either.

As is further represented in figure 5, lateral surfaces, in particular contact surfaces 21-22 are present under the above-mentioned bevels 15, which fit up to one another at least at the top when the panels 2 are coupled, and thus form a mutual stop.

It is clear that the first aspect of the invention can be applied with panels 2 having an elongated design, as represented in figure 2, as well as with panels 2 having a square design.

According to the above-mentioned second aspect of the invention, which ⁱⁿ the given example of figures 1 and 2 is combined with the above-mentioned first aspect, but which can also be realized as separate from the first aspect, the ^{INVENTIVE} concerns a floor covering 1, consisting of laminated hard panels 2 having a core 23 and a ^{panel} decorative upper surface 24, whereby these panels 2 are rectangular and elongated and are provided with coupling means 7 on at least two opposite longitudinal edges 3-4 and/or 5-6, as a result of which several of such panels 2 can be mutually coupled to one another, whereby these coupling means 7 are provided with an interlocking in a direction perpendicular to the plane of the floor covering 1, as well as in a direction perpendicular to the edges 3-4-5-6 concerned and parallel to the plane of the floor covering, and whereby these coupling means 7 are made such that the panels 2 can be coupled and/or uncoupled by means of a rotation along their longitudinal edges 3-4 and/or 5-6, ^{such} characterized in] that the useful width B of the panels 2 is smaller than 17 cm, and preferably amounts to 15.5 cm.

Such a narrow width B, combined with coupling means 7 of the type whereby the uncoupling has to be carried out by rotating the panels 2 in relation to one another, as represented in figure 6, offers the advantage that the height H2 over which the panel 2 to be uncoupled has to be rotated before it is detached, also remains relatively small, as a result of which the disadvantage mentioned in the introduction ^{is} minimised.

Moreover, the panels 2, according to the second aspect of the invention, preferably also have a length L which amounts to at least eight times the width B.

Preferably, the panels 2 made according to the second aspect of the invention, also have a single pattern which is repeated over the entire top surface, in particular a wood pattern.

Figure 9 illustrates the third aspect of the invention. According to this third aspect, the invention concerns a floor covering 1 consisting of hard panels 2 with a laminated structure, having a decorative layer 25 on the top surface, characterized in that ^{panel} bevels 15 or such are formed on one or several edges 3 to 6 of the panels 2, near the top side, and in that ^{when cut away} the surface of these bevels 15 or such is also provided with a decorative layer, in this case a print 26, which is preferably obtained as a print layer ^{bevel} has been provided on this surface by means of transfer printing. ^{That}

^{exposed} The decorative layer 25 may as such consist of several layers, but it preferably contains at least one layer imprinted with a pattern, for example a wood pattern printed on a paper layer. In this case, the print 26 can be realized on the bevels 15 or such with a similar pattern. As a printing technique is applied for the decorative layer as well as for the print 26, it is very easy to match both patterns as far as colour and/or design are concerned.

As mentioned in the introduction, the print 26 is preferably moisture-proof, ^{and} impermeable ^{on} [respectively]. Thus is obtained a sealing on the bevels 15, which is particularly useful when the panels have a porous core, for example made of MDF or HDF.

Figures 10 and 11 schematically represent how the print 26 can be provided on the surface 27 by means of transfer printing. A support 28 which is provided with a printing layer 29 is put into contact with the surface 27 and is applied with a preferably heated press-on roller 30, as

a result of which the printing layer 29 adheres to the material of the panel 2 and comes off the support 28, so that the above-mentioned print 26 is created. The support 28 with the printing layer 29 is hereby supplied as of a roller 31, whereas said support 28, after the printing layer 29 has been transferred to the surface 27, is rolled up on a roller 32.

Other transfer printing techniques which are known as such are not excluded, however.

It should be noted that, both as far as the above-mentioned first aspect and the third aspect are concerned, according to a preferred embodiment, one or several, and preferably all bevels 15 extend at such an angle that the *plane including the* extension, determined by said bevel 15, *does not intersect* outside] the contour of the panel 2 or at most just touches it, as indicated by the lines W in figures 3, 4 and 10. *outside the bevel area* This is advantageous in that, both when the bevels 15 are formed and when the print 26 is applied, these bevels 15 are easily accessible to the machine parts used in the *manufacturing* procedures.

According to a fourth aspect of the invention, it concerns a floor covering consisting of laminated hard panels 2 with a core 23 based on MDF or HDF, or a similar material, *whereby* characterized in that the panels 2 are each separately provided with an underlayer 36 made of synthetic material or another dampening or insulating material provided on the bottom side and fixed onto it, preferably made of polyethylene or polyethylene base material, as represented in figure 12. The combination of these materials offers the advantage that little sound is produced when these panels 2 are walked on.

The above-mentioned underlayer 36 can be fixed to the bottom side of the panel 2 in any way whatsoever, for example by means of gluing or by melting it onto ^{the panel} it. In the case of a conventional laminate construction, the structure thus consists of the decorative layer 25, the core 23, usually based on MDF or HDF, a counterlayer 37, and the above-mentioned underlayer 36.

It is clear that the fourth aspect of the invention can be used in combination with floor panels which are provided with a conventional tongue and groove on their edges, as well as in combination with floor panels with coupling means which provide for a horizontal and a vertical interlocking, for example coupling means 7 as described above.

with the accompanying drawings; or
The invention is by no means limited to the above-described embodiments represented the contrary, such a floor, *and in particular the* above-mentioned panels, dimensions while still remaining within the scope of the invention.
can be made in all shapes and



MARKED-UP VERSION OF AMENDED CLAIMS

Claims.

1(Amended). A floor covering panel comprising [hard panels each having] a top side, [said panels having] at least [on] two opposite edges including coupling elements made in one piece with the panel [panels] and arranged so that several ones of such panels can be mutually coupled to form a floor coupling, said coupling elements arranged to enable an interlocking of the coupling elements between panels in a direction perpendicular to a plane including the panels [floor covering], as well as in a direction perpendicular to the respective edges and parallel to the plane including the panels [floor covering], and wherein these coupling elements are configured so that the panels can be rotated into [and/or] or out of one another at least along said opposite edges, [and wherein said panels are provided, at least on the said opposite edges, near the top sides, with a part from which has been removed an amount of panel material] and wherein said panel is a laminated construction including at least an MDF/HDF core layer and a panel decorative layer above the core layer;

said coupling elements are formed in one piece with the core layer and define tongue and groove interlocking elements;

a cut-away bevel adjacent said at least two opposite edges, and intersecting said top side, said cut-away bevel penetrating and exposing an edge area of said panel decorative layer and said core layer when viewed from the top side of the panel; and

a decorative bevel covering layer on the area of the cut-away bevel masking said exposed edge areas, said bevel covering layer being a separate layer apart from said panel decorative layer.

3(Amended). The floor covering panel according to claim 1 [2], wherein each bevel extends at an angle of 45° in relation to the plane including the panel [panels].

4(Amended). The floor covering panel according to claim 3, wherein each bevel, in the plane of the respective panel, extends over a distance [on the order of magnitude] of about 2 millimeter.

6(Amended). The floor covering panel according to claim 1, wherein the coupling elements when coupled between ones of said panel, are disconnectable at least in one additional manner other than rotation relative to the coupled edges of the panels.

7(Amended). The floor covering panel according to claim 1, wherein the panel is [panels are] rectangular and said bevel is [parts and bevels are] provided on all four sides of the panels.

8(Amended). A floor covering panel comprising a hard panel formed [panels] of laminated construction and [each] including a core upon which is provided a panel decorative layer [laver], said panel being [panels are] rectangular and elongated and [are provided with] including coupling elements at least on two opposite longitudinal edges of the panel, such [panels, so] that several ones of such panel [panels] can be mutually coupled to one another, wherein said coupling elements are arranged to enable an interlocking in a direction perpendicular to a plane including the [floor covering] panel, as well as in a direction perpendicular to the respective opposite edges and parallel to a plane including the panel [floor covering], and wherein the coupling elements are configured such that individual [the] panels can be coupled and/or uncoupled with similar panels by means of rotation motion about cooperating opposed

longitudinal edges of the panels, and wherein the width of the [panels] panel (2) is smaller than 17 cm.

9(Amended). The floor covering panel according to claim 8, wherein the panel has [panels each have] a length which amounts to at least eight times the width of the panel.

10(Amended). A floor covering panel comprising [hard panels having] a laminated structure including an MDF/HDF core layer, said core layer including[,] an upper core surface and opposed core edges, a panel decorative layer on the upper core surface, a cut-away bevel having a bevel area [surface] formed on at least one of said edges and extending through the panel decorative layer [near the upper surface], wherein said bevel area [surface] of each said bevel is also provided with a bevel decorative layer separate from said panel decorative layer covering the core and decorative layers exposed by the bevel.

11(Amended). The floor covering panel according to claim 10, wherein the bevel decorative layer provided on each said bevel area comprises a print.

12(Amended). The floor covering panel according to claim 11, wherein said print is a transfer layer [print created by transfer printing].

14(Amended). The floor covering panel according to claim 10, wherein the panel decorative layer of the top core surface comprises [contains] a paper layer printed with a pattern.

15(Amended). The floor covering panel according to claim 14, wherein the bevel decorative layer represents a print on each bevel area.

and wherein [in that] this print is provided with a pattern similar to the panel decorative layer [of the upper surface].

16(Amended). The floor covering panel according to claim 10, wherein the bevel decorating layer on each bevel is a moisture-proof, impermeable [decorative print] layer [is provided on each bevel].

17(Amended). The floor covering panel according to claim 2 [1], wherein each bevel extends at an angle so that the plane including [an imaginary extension of] the bevel [is located outside] does not intersect the contour of the respective edge section of the panel at which the bevel is provided outside of the bevel area [or at most just touches it].

18(Amended). A floor covering panel comprising a laminated hard construction [panels] having an MDF or HDF based core and a bottom side, wherein the [panels are each] panel is separately provided with an underlayer attached to the bottom side, said underlayer being polyethylene or polyethylene based material.

20(Amended). The floor panel covering according to claim 1, wherein the panel has [panels have] a minimum thickness of 9 mm.

21(Amended). The floor covering panel according to claim 1, wherein the panel has [panels have] a minimum thickness of 10 mm.

22(Amended). The floor covering panel according to claim 1, wherein at least on a plurality of said opposite edges, said coupling elements made in one piece with the panel [panels] are provided, such that several ones of such panel [panels] can be mutually coupled to form a floor covering, said coupling elements configured to be interlocking in a direction perpendicular to the plane of the panel [floor covering], as well

as in a direction perpendicular to said edges and parallel to a plane including the panel [floor covering], said coupling elements having a combination of two or more configurations selected from the group consisting of [any one of or a combination of two or more of any of the following characteristics]:

the coupling elements [that they] are provided on [panels which are] each panel, which is rectangular and has [have] two pairs of opposite edges, and wherein said coupling elements are provided on both pairs of opposite edges;

[that] at least for a plurality of said opposite edges the coupling elements are configured and arranged so that ones of said panel [they] may be assembled according to one of the following procedures:

at least by shifting the panels towards one another while they are located generally in a common plane;

exclusively by shifting the panels towards one another while they are located generally in a common plane;

at least by rotating the panels along a respective set of opposite edges;

exclusively by rotating the panels along a respective set of opposite edges;

by shifting the panels towards one another in a generally common plane as well as by rotating them relative to each other;

[that,] at least for a plurality of edges, said coupling elements are arranged to enable uncoupling of coupled ones of said panel according to any of the following procedures:

at least by shifting the panels out of one another in a direction perpendicular to the edges;

exclusively by shifting the panels out of one another in a direction perpendicular to the edges;

at least by rotating the panels along the respective edges;

exclusively by rotating the panels along the respective edges;
by shifting the panels out of one another in a direction perpendicular to the edges as well as by rotating them relative to each other;

the tongue and groove interlocking [that the coupling] elements [are of the type that] comprise [a tongue and a groove on the one hand, and a locking device which enables a specific interlocking at least in a direction perpendicular to the edges of the coupled panels and parallel to the plane of the panels on the other hand;]

[that the coupling elements as defined in the preceding paragraph include] a lower lip which defines the bottom side of the groove, as seen from a cross section of the panel, and [that] said lip extends past an upper lip of the panel, and wherein the locking device comprises parts on said lower lip defining the bottom side of the groove on the one hand, and of one or more portions of the bottom side of the tongue cooperating with the latter on the other hand; [that said tongue and groove] are made such that when two of such panels are freely shifted towards one another in a generally common plane, the tongue is automatically introduced into [is located in] the groove; and [that the panels, when coupled, are] when interlocked, the tongue and groove interlocking elements are coupled [without or] substantially without any play.